

REMARKS/ARGUMENTS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the following remarks.

The Applicants originally submitted Claims 1-20 in the application. Previously, the Applicants amended Claims 1, 5-6, 9, 13-14 and 17 and added Claims 21 and 22. Presently, the Applicants have neither amended, canceled nor added any claims. Accordingly, Claims 1-22 are currently pending in the application.

I. Rejection of Claims 1, 2, 4, 7, 9, 10, 12, 15 and 17-22 under 35 U.S.C. §102

The Examiner has rejected Claims 1, 2, 4, 7, 9, 10, 12, 15 and 17-22 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,494,837 to Subramanian, *et al.* ("Subramanian"). Independent Claims 1, 9 and 17 currently include the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. The Applicants assert that Subramanian fails to teach these elements.

Subramanian is directed to a method of forming a semiconductor-on-insulator (SOI) electronic device. (Abstract) Subramanian teaches that the method includes the steps of etching a semiconductor substrate 10 to form a plurality of adjacent trenches 24 therein and then forming a single electrically insulating layer 30 along the outer sidewall 24b and bottom 24c of each of the trenches 24. However, while Subramanian may teach a single electrically insulating layer 30 in each of the trenches 24, it does not teach an isolation structure located in a trench and a sidewall spacer

located over at least one sidewall of the trench distal the channel region. That is, it does not teach both elements.

The Examiner asserts that the single electrically insulating layer 30 of Subramanian acts as both the claimed isolation region and the claimed sidewall spacer. Nevertheless, the Applicants claim two distinct structures formed in two separate and distinct manufacturing steps. Subramanian fails to teach both claimed steps. The Examiner is not legally entitled to draw the attempted correlation. Therefore, Subramanian fails to teach both claimed elements.

Therefore, Subramanian does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 2, 4, 7, 10, 12, 15 and 18-22 are dependent upon Claims 1, 9 and 17, Subramanian also cannot be an anticipating reference for Claims 2, 4, 7, 10, 12, 15 and 18-22. Accordingly, the Applicants respectfully requests the Examiner to withdraw the §102 rejection with respect to these Claims.

II. Rejection of Claims 3 and 11 under 35 U.S.C. §103

The Examiner has rejected Claims 3 and 11 under 35 U.S.C. §103(a) as being unpatentable over Subramanian in view of U.S. Patent Application No. 2001/0000111 A1 to Blanchard ("Blanchard"). As indicated above, independent Claims 1, 9 and 17 currently include the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. As also indicated above, Subramanian fails to disclose both of these elements. The Applicants assert that Subramanian further fails to suggest both of these elements, as it fails to mention another isolation structure or sidewall spacer in the trench.

In addition to Subramanian failing to teach or suggest both of these elements, the Applicants assert that Blanchard also fails to teach or suggest these elements.

The Examiner is using Blanchard for the sole proposition that the source/drain regions may comprise polysilicon. Notwithstanding the merits of the Examiner's position, Blanchard also fails to teach or suggest the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. A teaching or suggestion that the source/drain regions may comprise polysilicon is dissimilar to a teaching that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region, as required by independent Claims 1, 9 and 17.

Accordingly, the combination of Subramanian and Blanchard fails to teach or suggest the invention recited in independent Claims 1, 9 and 17 and their dependent claims, when considered as a whole. Thus, the combination has failed to establish a prima facie case of obviousness with respect to Claims 1, 9 and 17 and their dependent claims. Claims 3 and 11 are therefore not obvious in view of the combination.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 3 and 11 under 35 U.S.C. §103(a). The Applicants therefore respectfully requests the Examiner withdraw the rejection.

III. Rejection of Claims 5, 6, 13 and 14 under 35 U.S.C. §103

The Examiner has rejected Claims 5, 6, 13 and 14 under 35 U.S.C. §103(a) as being unpatentable over Subramanian in view of U.S. Patent No. 5,598,019 to Komori, *et al.* ("Komori"). As indicated above, independent Claims 1, 9 and 17 currently include the elements that an isolation

structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. As also indicated above, Subramanian fails to teach or suggest both of these elements. The Applicants assert that Komori also fail to teach or suggest these elements.

The Examiner is using Komori for the sole proposition that a nitride spacer may be located between the sidewall and the sidewall spacer. Notwithstanding the merits of the Examiner's position, Komori also fail to teach or suggest the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. A teaching or suggestion of a nitride spacer placed between a sidewall and a sidewall spacer is dissimilar to a teaching that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region, as required by independent Claims 1, 9 and 17.

Accordingly, the combination of Subramanian and Komori fails to teach or suggest the invention recited in independent Claims 1, 9 and 17 and their dependent claims, when considered as a whole. Thus, the combination has failed to establish a prima facie case of obviousness with respect to Claims 1, 9 and 17 and their dependent claims. Claims 5, 6, 13 and 14 are therefore not obvious in view of the combination.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 5, 6, 13 and 14 under 35 U.S.C. §103(a). The Applicants therefore respectfully requests the Examiner withdraw the rejection.

IV. Rejection of Claims 8 and 16 under 35 U.S.C. §103

The Examiner has rejected Claims 8 and 16 under 35 U.S.C. §103(a) as being unpatentable over Subramanian in view of U.S. Patent No. 5,814,863 to Pan (“Pan”) and U.S. Patent No. 5,753,557 to Tseng (“Tseng”). As indicated above, independent Claims 1, 9 and 17 currently include the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. As also indicated above, Subramanian fails to teach or suggest both of these elements. The Applicants assert that Pan and Tseng, either alone or in combination, also fail to teach or suggest these elements.

The Examiner is using Pan and Tseng for the sole proposition that the device includes LDD regions. Notwithstanding the merits of the Examiner’s position, Pan and Tseng also fail to teach or suggest the elements that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region. A teaching or suggestion of LDD regions is dissimilar to a teaching that an isolation structure is located in a trench and that a sidewall spacer is located over at least one sidewall of the trench distal the channel region, as required by independent Claims 1, 9 and 17.

Accordingly, the combination of Subramanian, Pan and Tseng fails to teach or suggest the invention recited in independent Claims 1, 9 and 17 and their dependent claims, when considered as a whole. Thus, the combination has failed to establish a prima facie case of obviousness with respect to Claims 1, 9 and 17 and their dependent claims. Claims 8 and 16 are therefore not obvious in view of the combination.



In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 8 and 16 under 35 U.S.C. §103(a). The Applicants therefore respectfully requests the Examiner withdraw the rejection.

V. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-22.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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